

Application Serial No.: 09/917,649
Applicant: Mark J. Feldstein

Docket No.: N.C. 79,856

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A fluidics system, comprising:

a primary fluid channel comprising an input and an output;

an enclosed first reservoir connected to said primary fluid channel input and comprising a first adjustable vent;

an enclosed second reservoir connected to said primary fluid channel input and comprising a second adjustable vent;

an auxiliary fluid reservoir and a connection valve,

wherein the auxiliary fluid reservoir is connected in series through the connection valve to an auxiliary input of at least one of the first and second reservoirs; and the system is configured to selectively draw fluid from the auxiliary fluid reservoir into at least one of the first and second reservoirs when the negative pressure source is activated, the connection valve is open, and the respective reservoir is not vented to a pressure source having a pressure less than a pressure of the negative pressure source;

a negative pressure connected to said primary fluid channel output;

wherein the fluidics system is configured to selectively draw at least one fluid from at least one of the first and second reservoirs into the primary fluid channel when the negative pressure source is activated and the respective reservoir is unsealed.

Claim 2 (previously presented): The fluidics system of claim 1, further comprising:

an analytical device associated with said primary fluid channel.

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Claim 3 (previously presented): The fluidics system of claim 1, wherein said primary fluid channel is at least 10% larger in cross section than any particle in said first and second fluids.

Claim 4 (previously presented): The fluidics system of claim 1, further comprising:
more than one secondary fluid channel configured parallel and/or serial to each other.

Claim 5 (previously presented): The fluidics system of claim 4, further comprising:
more than one negative pressure source downstream of said secondary fluid channels.

Claim 6 (previously presented): The fluidics system of claim 4, further comprising:
a manifold connecting said secondary fluid channels to said negative pressure source.

Claim 7 (previously presented): The fluidics system of claim 1, wherein said first reservoir comprises more than one chamber.

Claim 8 (previously presented): The fluidics system of claim 1, further comprising:
a valve associated with said first vent; and
a valve associated with said second vent.

Claim 9 (canceled)

Claim 10 (previously presented): The fluidics system of claim 1, further comprising:
a second primary fluid channel; and
a second manifold connecting said primary fluid channels to said negative pressure source downstream of said primary fluid channels.

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Claim 11 (previously presented): The fluidics system of claim 1, further comprising:

a waveguide for surface-sensitive optical detection of an analyte in said first or second fluid.

Claim 12 (previously presented): The fluidics system of claim 11, further comprising:

a waveguide sensing system;

wherein said waveguide sensing system comprises:

a plurality of waveguides;

wherein each of said waveguides has a first surface, a second surface opposing said first surface, and an end surface essentially perpendicular to said first and second surfaces, and

wherein said first surface of each of said waveguides has an analyte recognition element thereon;

a waveguide holder to which each of said waveguides is secured; and

an optical detector positioned opposite said end surface of at least one of said waveguides.

Claim 13 (previously presented): The fluidics system of claim 1, wherein said first and second vents are adjustable so that first and second fluids from said first and second reservoirs, respectively, move at a first and a second flow rate to said primary fluid channel; and

wherein a difference between said first and second flow rates is proportional to a difference in adjustments of said first and second vents.

Claim 14 (previously presented): The fluidics system of claim 1, wherein first or second fluid moves from said first or second reservoirs, respectively, at a first and second flow rate,

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wherein a difference between said first and second flow rates is proportional to a differential fluid flow resistance, and

wherein said differential fluid flow resistance is adjusted by said first and second fluid vents.

Claim 15 (previously presented): The fluidics system of claim 1, wherein said primary fluid channel has a cross section greater than 1 micron.

Claim 16 (previously presented): The fluidics system of claim 1, wherein said system is a portable analysis system configured to perform at least one of a biological and chemical analysis.

Claims 17-26 (canceled)

Claim 27 (previously presented): The system of claim 1, wherein the system is configured such that fluid does not flow from said reservoirs into said primary fluid channel unless both said negative pressure source is activated and said at least one reservoir is unsealed.

Claim 28 (previously presented): The system of claim 1, wherein the system further comprises a system relief vent connected to said primary flow channel, said system relief vent being configured to seal and unseal said primary flow channel from contact with an external atmosphere.

Claim 29 (currently amended) A fluidics system, comprising:

a primary fluid channel comprising an input and an output, wherein the primary fluid channel is configured to have ~~minimal cross-sectional dimensions~~ a characteristic dimension such that the selective fluid drawing is not a low Reynolds number fluid flow;

an enclosed first reservoir connected to said primary fluid channel input and comprising a first adjustable vent;

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an enclosed second reservoir connected to said primary fluid channel input and comprising a second adjustable vent;

a negative pressure connected to said primary fluid channel output;

wherein the fluidics system is configured to selectively draw at least one fluid from at least one of the first and second reservoirs into the primary fluid channel when the negative pressure source is activated and the respective reservoir is unsealed.